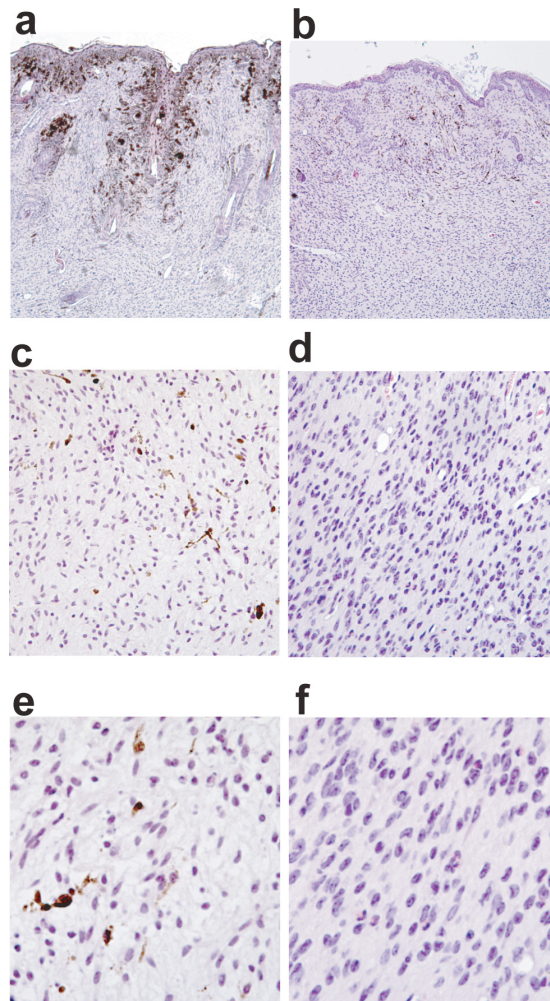


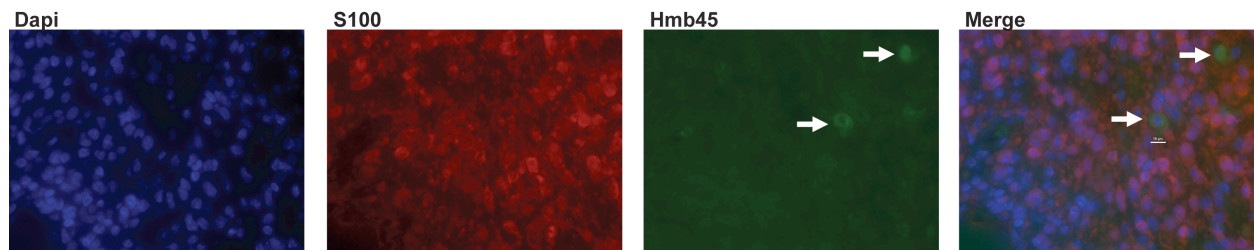
SUPPLEMENTARY FIGURES



Supplementary Figure 1. The $\text{BRaf}^{\text{V600E}}\text{-Pten}^{\text{Null}}$ melanomas on a C57BL/6 background are histologically similar to the $\text{BRaf}^{\text{V600E}}$ -pigmentation variant melanomas.

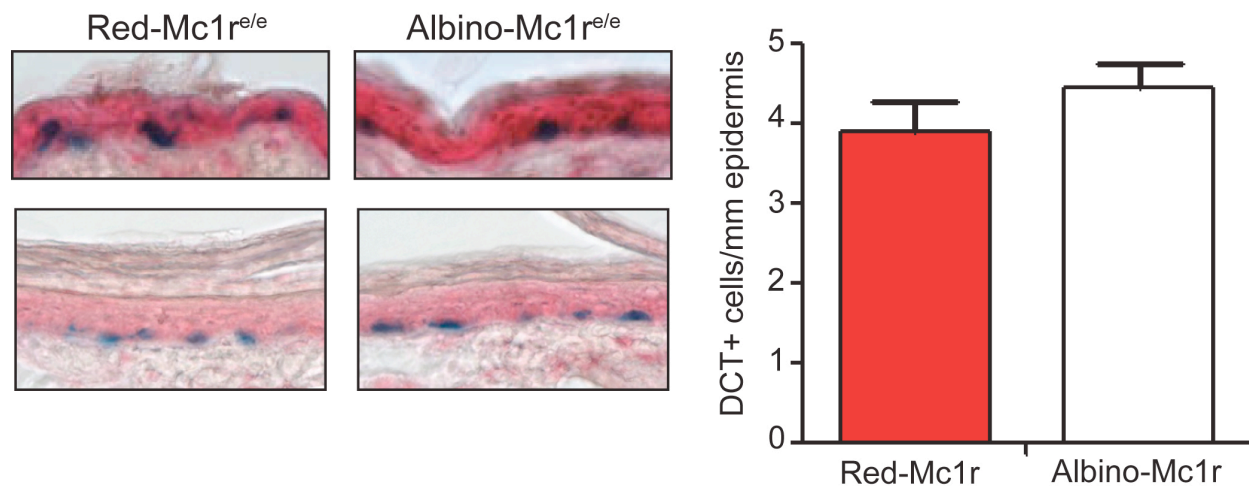
(a,c,e) On the C57BL/6 background, some $\text{BRaf}^{\text{V600E}}\text{-Pten}^{\text{Null}}$ melanomas are heavily pigmented superficially but typically become less pigmented at greater tumor depths.

(b,d,f) Other $\text{BRaf}^{\text{V600E}}\text{-Pten}^{\text{Null}}$ melanomas, however, are generally amelanotic. These tumors were seen to exhibit the same spindle cell-like morphology as the BRaf -pigmentation variant melanomas.



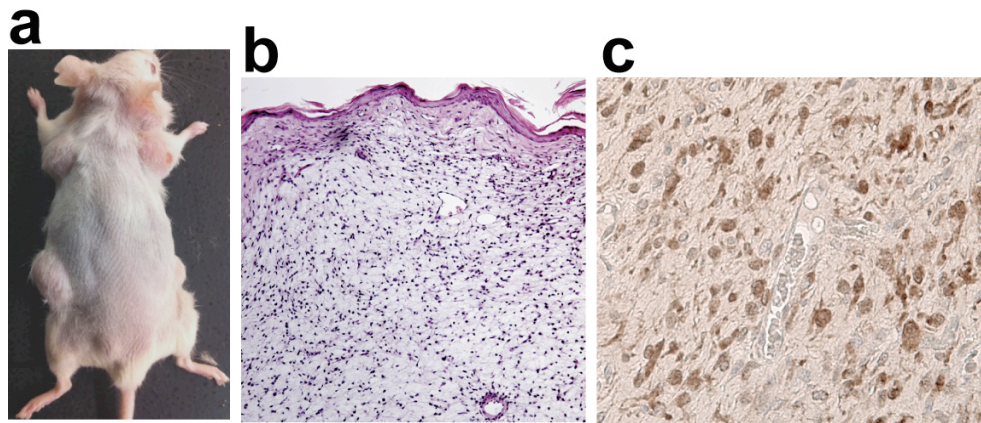
Supplementary Figure 2. Occasional Hmb45/Gp100+ tumor cells can be found by immunofluorescence.

While the bulk of the tumor cells are S100 positive, occasional Hmb45/Gp100 positive cells can be found in the primary melanoma mass (arrows), consistent with the relatively undifferentiated state of the melanocytes of origin.



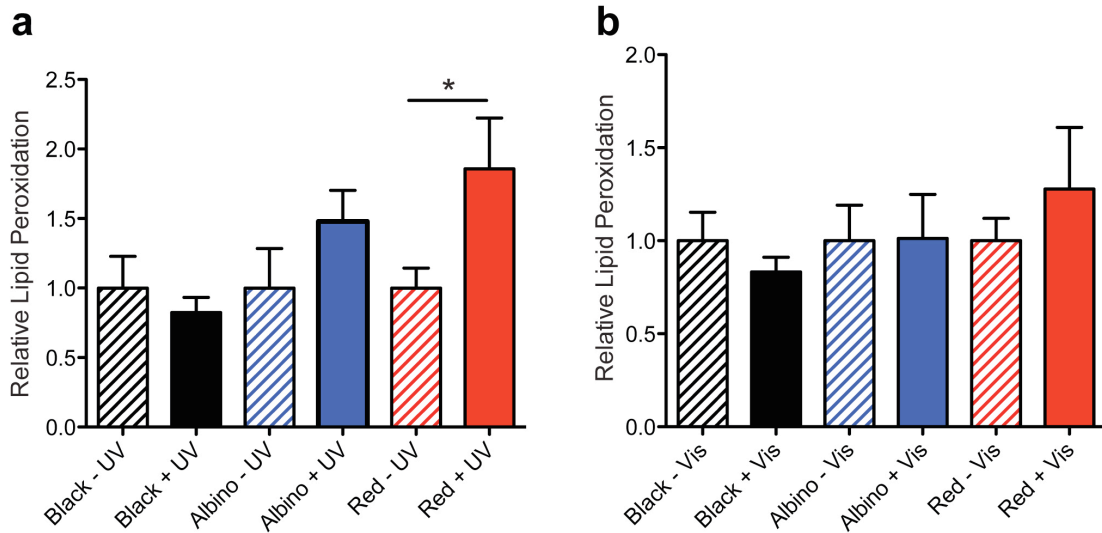
Supplementary Figure 3. Redhead-*Mc1r*^{e/e} and albino-*Mc1r*^{e/e} *K14-SCF* mice do not differ significantly in epidermal melanocyte number

(a) β-galactosidase staining of frozen sections from red-*Mc1r*^{e/e} (*Mc1r*^{e/e}; *Tyr*^{+/+}; *K14-SCF*) and albino-*Mc1r*^{e/e} (*Mc1r*^{e/e}; *Tyr*^{c/c}; *K14-SCF*) mice which also carry the *Dct-LacZ* transgene. **(b)** Quantification of Dct+ epidermal melanocytes (*n*=20).



Supplementary Figure 4. Melanomas arising in albino-*Mc1r*^{e/e} mice are similar to the other pigmentation variant melanomas.

(a) The tumors on the albino-*Mc1r*^{e/e} animals were grossly amelanotic, **(b)** histologically similar to the other B*Raf*^{V600E} tumors, and **(c)** stained positively for the S100 melanoma marker.



Supplementary Figure 5. UV irradiation but not high intensity visible light exposure promotes oxidative lipid damage in redhead mouse skin.

(a) UV irradiation ($10\text{J}/\text{cm}^2$ UVA- $0.65\text{J}/\text{cm}^2$ UVB) significantly increases lipid peroxidation levels in red mouse skin but not in black or albino mouse skin (n=12)

*=p<0.05. **(b)** High-dose visible light exposure ($180\text{J}/\text{cm}^2$) did not significantly increase lipid peroxide levels in any pigmentation phenotype (n=6).